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AUTHOR Myroon, John L.
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ABSTRACT

The major purpose of this paper was to develop a Human Resource Accounting (HRA) macro-model that could be used for designing a school organizational effectiveness audit. Initially, the paper reviewed the advent and definition of HRA. In order to develop the proposed model, the different approaches to measuring effectiveness were reviewed, effectiveness was defined, a functional goal-setting rationale was developed, a goals/growth framework was established, and the effectiveness-efficiency relationship was identified. The six identified effectiveness variables were briefly discussed and the model summarized. Finally, eight implications to educational effectiveness were identified and explained. (Author)

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**TOWARD AN HUMAN RESOURCE ACCOUNTING (HRA)-BASED
MODEL FOR DESIGNING AN ORGANIZATIONAL
EFFECTIVENESS AUDIT IN EDUCATION**

A Paper

by

**John L. Myroon
Department of Educational Administration
University of Alberta
Edmonton, Alberta**

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Annual Conference
of the**

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J. Myroon

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC) AND
USERS OF THE ERIC SYSTEM

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INTRODUCTION

An analysis of organizational theory writings revealed that each article, implicitly if not explicitly, was concerned with organizational effectiveness. The literature relating explicitly to effectiveness suggests that effectiveness is a complex concept, and as such, there is a ". . . lack of consensus as to what constitutes a useful and valid set of effectiveness measures" (Steers, 1975:549). Further, the problem of effectiveness in human service organizations is compounded for human service organizations ". . . lack reliable and valid measures of effectiveness" (Hasenfield and English, 1975:21).

Steers (1975:550) suggests there are two general types of effectiveness models: normative or prescriptive and descriptive. The major purpose of the paper is to develop an Human Resource Accounting (HRA)-based descriptive, macro-model for use in designing an organizational effectiveness audit or assessment. In order to develop the model, the paper will specifically deal with: (1) advent and definition of HRA, (2) approaches to measuring effectiveness, (3) definition of effectiveness, (4) functional goal setting rationale, (5) establishment of a goals/growth framework, (6) discussion of the effectiveness-efficiency relationship and identification and explication of the six major effectiveness variables. Finally, the paper will discuss the implications of the model upon effectiveness in education.

HUMAN RESOURCES ACCOUNTING

Advent

The recognition by management that the individual, in an organizational setting, is a valuable asset, resource or capital has brought about a restructuring of management, organizational and accounting theory to include the HRA construct. The notion of people being a valuable resource, claim Dunn and Stephens (1972:208) ". . . is an old one," and can be historically traced to Adam Smith's Wealth of Nations. Hermanson et al., (1973:169), Dunn and Stephens (1972:209) and Lev and Schwartz (1971:103) suggest that economists concerned with the well-being of a nation were the first group to consider people as human capital.

But it was not until the 1950's that the concept of resource management (human, physical and financial) was given impetus through Drucker's book, The Practice of Management (Morrison, 1972:8019). Since the 1950's, much progress has been attained in the theory and practice of physical and financial asset management, but there has been limited progress in the area of human asset management (Morrison, 1972:8019). Liddon and Morrison (1972:3) demonstrate that two economists, Schultz in 1961 and Becker in 1964, stressed the importance of human capital in an organization. However, Brummet et al., (1973: 533), Dermer and Siegel (1974:90), Jaggi and Hon-Shiang Lau (1974:321) and Glautier and Underdown (1974:163) all identify Likert, a social scientist in charge of the University of Michigan's Institute for Social Research, as the father of HRA; the man who synthesized the notion of human capital into a workable theory.

Definition

Because HRA is a relatively new construct, the concept has no clearly defined boundaries (Hermanson, et al., 1973:170). Brummet et al., (1973:540) add that because HRA is in an early stage of theorizing and testing, a host of problems related to the concept need to be resolved. As a result, researchers have tended to develop and interpret the concept and its tenets independent of other researchers (Myroon, 1975:6). The first general definition of HRA was provided by Likert, Brummet, Pyle and Flamholtz (Brummet, et al., 1969:iii): ". . . the process of identifying, measuring and communicating information about human resources to facilitate effective measurement within an organization." The 1973 Committee on Human Resource Accounting (Hermanson, et al., 1973:169) has not changed the purpose nor the intent of HRA, for they define HRA as ". . . the process of identifying and measuring data about human resources and communicating this information to interested parties." This appears to be the definition presently accepted by HRA theorists, researchers and practitioners.

The first conference on HRA, in 1969, established two purposes of HRA which are still accepted by researchers, theorists and practitioners of HRA today: to develop (1) ". . . capabilities for measuring those human resource variables which significantly alter organizational performance over time," and (2) ". . . means of utilizing these data to improve organizational effectiveness" (Brummet, et al., 1969).

The 1973 HRA Committee Report (Hermanson, et al., 1973:169) states that the purpose of HRA ". . . is to improve the quality of financial decisions made both internally and externally concerning

an organization." As well, the report suggests that HRA should result in management's recognition of employees as a valuable resource. However, the 1974 HRA Committee Report (Bruns, et al., 1974:115) suggests that because the early work on HRA ". . . focused primarily on getting measurements of human resources into reports used by managers and investors" the emphasis, in retrospect ". . . appears narrow and naive." The report asserts that HRA ". . . is better viewed as a part of the process of managing people in organizations," and as such, the purpose of HRA is ". . . not merely to account but to improve the way people contribute to organizations, society and economic well-being." In essence, then, the present day HRA advocates are suggesting that HRA can lead to a new paradigm for managing people which results in an overall improvement of organizational effectiveness. Flamholtz (1971:267) represents this belief best; he describes HRA as the "raison d'etre" of resource management, and as such, "it can simultaneously provide the goal and the criterion for the management of human resources." As well, goals and criterion (effectiveness or goal attainment indicators) are the "raison d'etre" of measuring organizational effectiveness.

This restructured conceptualization of HRA claims that the purpose of HRA is not only to measure and report the value of human capital to management but as well to have management recognize the value of the human resource, and more importantly, to improve ". . . the management of human resources so that the quantity and quality of goods and services are increased" (Bruns, 1974:116). The Bruns, et al., position, therefore, reaffirms the postulation that HRA can enhance the overall effectiveness of an organization.

Thus, from the above stated definitions and objectives of HRA, it can be argued that the HRA framework, at least on a macro-level, can provide a conceptual framework for designing an organizational effectiveness assessment or audit. Likert, in developing HRA, ". . . attempted to formulate a model of the variables which determine the effectiveness of a firm's 'human organization' and, in turn, the effectiveness of the enterprise as a whole" (Hermanson, et al., 1973: 175). Likert's HRA model (Likert and Bowers, 1974:408) is shown in Figure 1, while Figures 2 and 3 illustrate expanded versions of Likert's basic HRA model.

BUILDING AN ORGANIZATIONAL EFFECTIVENESS MODEL USING AN HRA FRAMEWORK

As established above, HRA is concerned not only with measuring the variables that pertain to organizational effectiveness but to improving organizational effectiveness as well. Further, Brummet, et al., (1973:533) state that Likert's research studies into HRA for more than two decades ". . . have revealed that relationships exist between certain variable constructs and organizational performance." How, then, does HRA provide the framework for designing an organizational effectiveness audit?

Approaches to Effectiveness

Several different approaches have been developed for determining organizational effectiveness. Hall (1972:97-102) for example, identifies three general approaches: goal, system-resource and multiple criteria, while Steers (1975:546) identifies univariate (using only one measure)

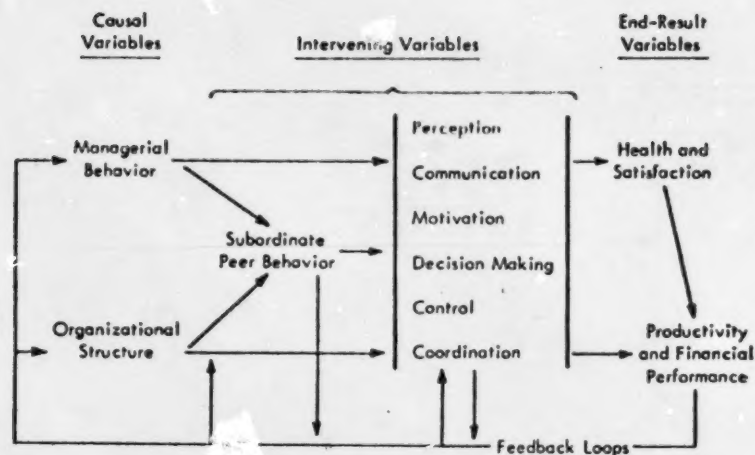


Figure 1

Basic HRA Model (Likert and Bowers, 1974:408)

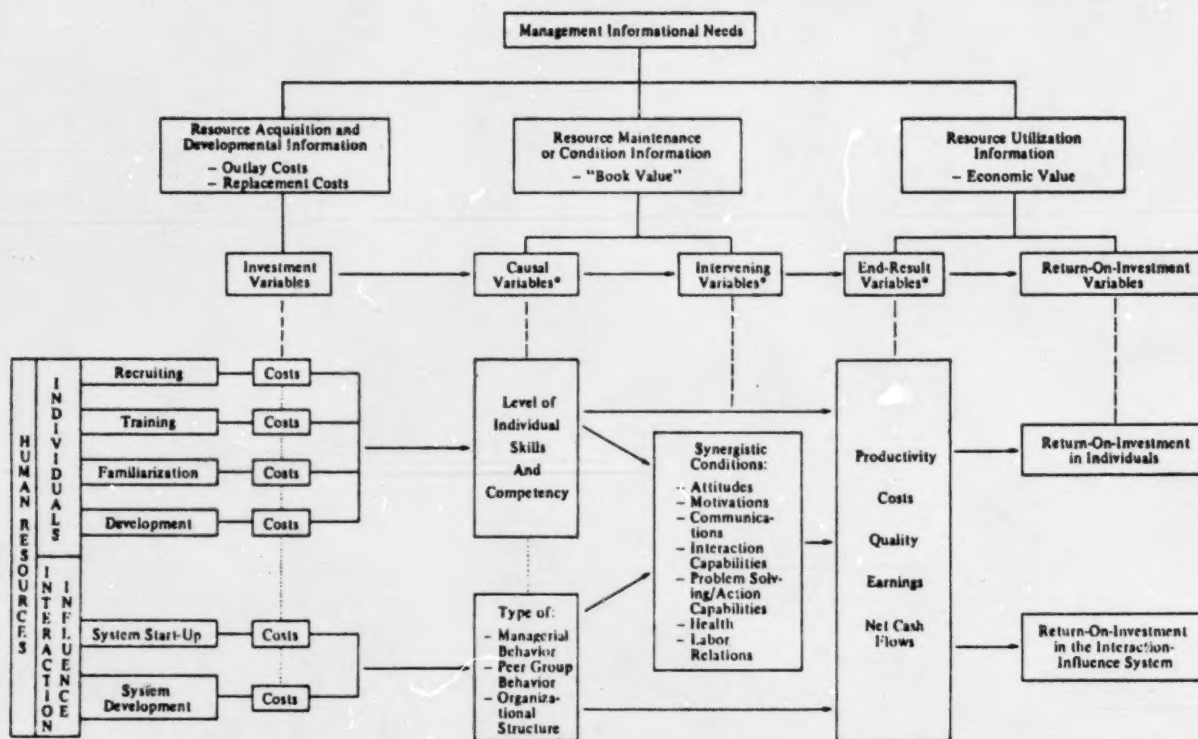


Figure 2

Expanded HRA Model (Robinson, 1974:28)

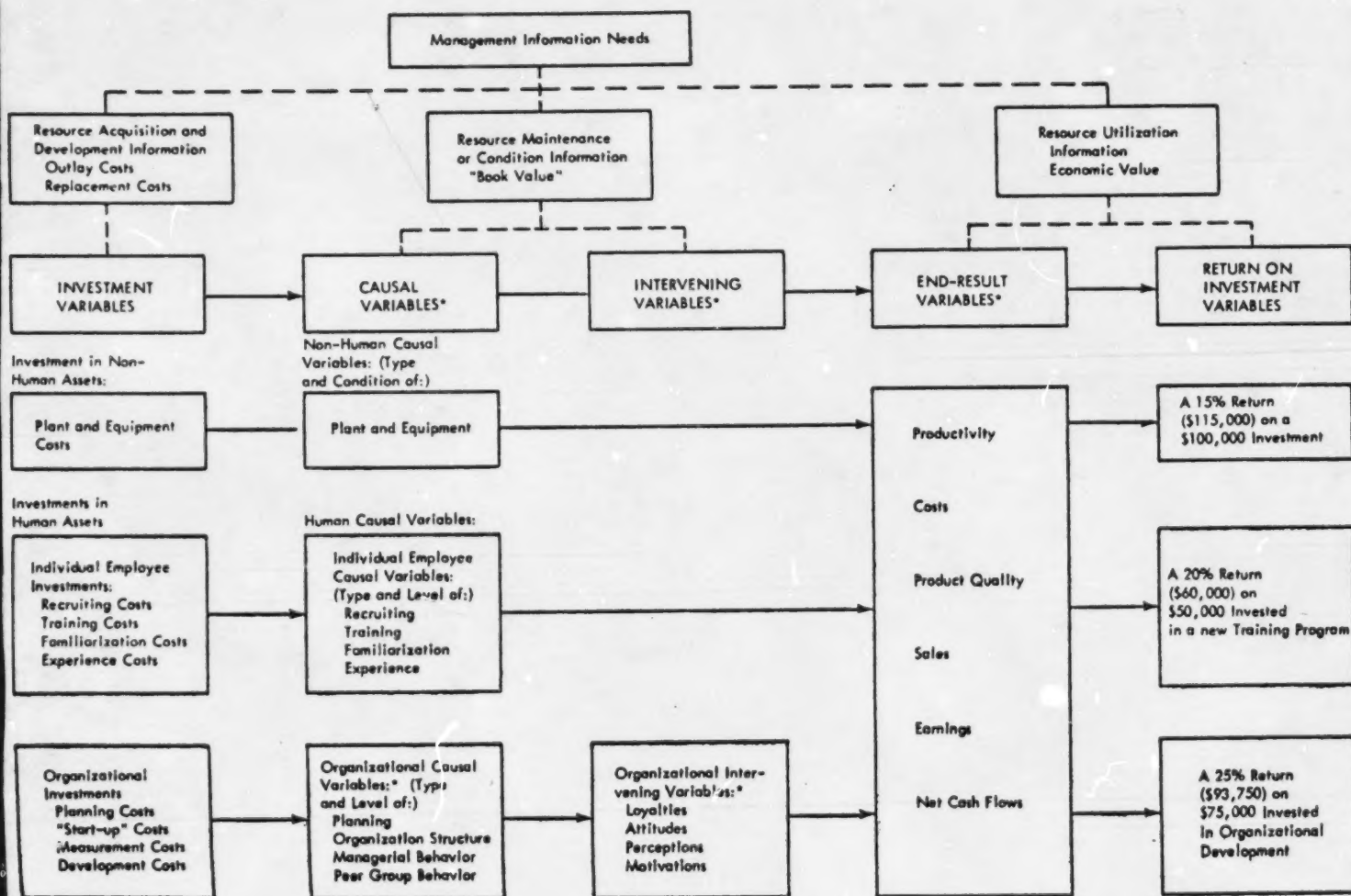


Figure 3
Expanded HRA Model (Brummet, et al., 1973:534)

and multivariate (sum of a set of relevant criteria). Ridgway (1974: 284) suggests three approaches: single criteria, multiple criteria and composite criteria. Yuchtman and Seashore (1973:161-165) suggest two traditional approaches: prescribed goal (as prescribed by the charter or top management) and derived goal or functional (normative goals derived through a logical consistency of theory and parts) and a more appropriate approach, system resource (degree to which an organization has exploited its environment in the acquisition of scarce and valued resources).

The proposed model for determining organizational effectiveness which is built on an HRA framework attempts to synthesize and inter-relate the best aspects of the above approaches into a comprehensive macro-model, and as such, consists of a goals framework and six variable categories: (1) external environment, (2) investment, (3) causal, (4) intervening, (5) end-result and (6) return on investment variables (Figure 4). It must be noted that ". . . there is no universal standard by which effectiveness can be judged" (Hall, 1972: 99). This being the case, then, the proposed model is developed on the assumption that it provides a design framework from which appropriate (Figure 4) variables and criteria would need to be chosen in relation to the kind and type of organization being studied.

Functional Goal Setting/ Growth Framework

1. Definition of effectiveness. What is effectiveness? The American College Dictionary (1959:383) defines effectiveness as "serving to effect the purpose; producing the intended or expected result."

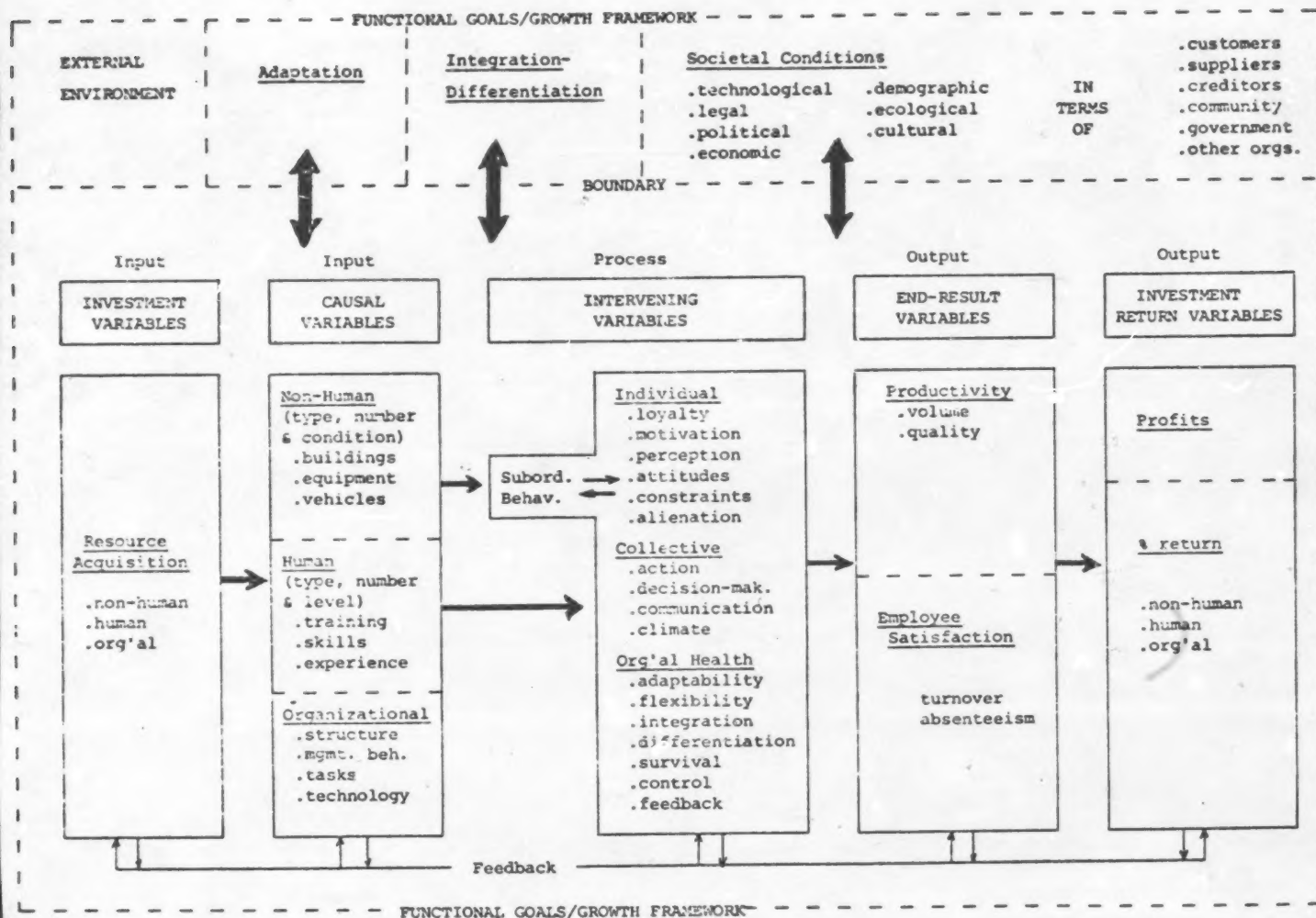


Figure 4
Model for Designing an Organizational Effectiveness Audit

Etzioni (1964:8), Georgopoulos and Mann (Price, 1968:102), Price (1972:101), Price (1968:3), Hall (1972:96) and Steers (1975:555) all define effectiveness as the degree of goal attainment or fulfillment of an expected result. Price (1968:3) suggests that goals are central to effectiveness because goals are common to all definitions of organizations. Performance and success are often used synonymously with effectiveness (Price, 1972:101). Organizational effectiveness, performance or success, then, is the degree to which a goal has been attained. If a goal has been fully attained, then an organization would be judged effective. On the other hand, if a goal or goals were not achieved, then the organization would be judged ineffective.

2. Goal-setting. It is often assumed that goals relate only to "outputs." But this is not necessarily the case. Donabedian (1975: 620-22), for example, suggests that the assessment of effectiveness, especially in human service organizations, must be concerned with outcomes, process and setting (inputs), i.e., a systems approach. Further, Etzioni (1964:8) suggests that organizational goals, while they are usually closely related to output, need not be exclusively of the output type. Further, Kast (McGuire, 197 :155) refers to environmental goals. As well, McNeil (1976) has suggested that in a systems framework, input, process, output and environmental goals become the standards and measures of effectiveness.

This being the case then, the proposed model (refer to Figure 4) suggests that organizational effectiveness should take into consideration the degree of goal attainment of input (causal and investment),

process (intervening), outcome (return on investment and end-result) and external environment variables. Goals, therefore, must be identified for all six variables prior to any effectiveness assessment.

3. Functional goals. Many writers, for example, Perrow (1972: 441), Yuchtman and Seashore (1973:161-64), Hall, 1972:80-96), Etzioni (1964:10-17) and Price (1972:101) exhort about the problems of identifying the real goals of an organization (reification included). Yuchtman and Seashore (1973:164) totally reject the goal approach and recommend the use of the system resource approach. However, this paper accepts the goals approach, for as Hall (1972:94) stated: "But there is still the simple but basic fact that the organization would not exist if it were not for some common purpose." However, what is the most appropriate goal approach?

Yuchtman and Seashore (1973:163), Hall (1972:83) and Price (1968:3-4) distinguish between operative, normative or functional goals and official or prescribed goals. This paper adopts the functional approach as being more appropriate, for Price (1972:101-2), in addressing the goal-identification problem resolved the issue by stating that,

. . . this problem is reduced to manageable proportions if the focus of research is on the organizational goal that the major decision makers actually pursue, and on data collected about the intentions and activities of the major decision makers.

Perrow (1972:441) supports this view as does Hall (1972:100), who states that ". . . operative goals serve as the bases for assessments of effectiveness."

It must also be stated that this paper does not reject Yuchtman and Seashore's (1973) system resource model for the functional

goals framework encompasses the resource model. They (Yuchtman and Seashore, 1973:167) state that ". . . resources are more or less generalized means or facilities." By looking at the degree of input and means goal attainment, one is in fact measuring the degree of resource acquisition.

In relation to the functional goals framework, this paper proposes a "variance" approach to measurement of effectiveness rather than an absolute standard approach. The difference, state Miles and Vergin (1969:421) ". . . is that variance controls provide a means of analyzing and evaluating performance on the basis of what is and what is likely, rather than exclusively on the basis of what ought to be." This way, effectiveness can be distributed around the average or mean level of attainment.

4. Goals/growth framework. The criteria for assessing organizational effectiveness, states Flory (1965:256), ". . . must be attuned to the developmental or maturation stage of the organization." This suggests that any consideration of effectiveness must take into account the "maturation" or "developmental" (Starbuck and Flory, 1965: 256) stage of the organization. What, then, is organizational growth?

Organizational growth is defined by Flory (1965:258) in relation to the biological growth of man, i.e., organizational growth is the developmental stages of an organization. However, Starbuck (1971:11) distinguishes between growth and development: growth is a change in size and development is a change in age. On the other hand, Hall (1972:135) suggests that growth is a pattern of maturation levels. For purposes of this paper, growth is defined as a change in age.

Growth should not be considered an organizational end, for as Starbuck (Hall, 1972:135) declares, ". . . growth is either a means of attaining other goals or a side effect of such attainment, rather than an end in itself." Hall (1972:135) further contends that growth has some effects upon, ". . . both structure (input) and process within the organization." Starbuck (1971:33) identified ten goals of growth and development and then classified them according to individual member behavior (process), management behavior (input), and outputs (end-results). This being the case, then, growth cannot be classified as either an input, process or output variable.

This paper proposes that organizational growth be considered as part of the goals framework, thereby making a goals/growth framework. Flory (1965:258) states that performance of organizations, ". . . must be evaluated by criteria appropriate to their developmental age." He is asserting that goals should be established in terms of the developmental stage rather than ". . . by predetermined, arbitrary standards" (Flory, 1965:258). This notion is crucial to establishing goal standards when measuring effectiveness: the goal standard would vary with the age of the organization. Because of age differences, Starbuck (1971:126) argues that organizational effectiveness should be compared ". . . with itself rather than other organizations."

Hall (1972:135) suggests, by referring to Starbuck, ". . . that there is no one pattern of change." However, Starbuck (1971:47) clearly distinguishes between characteristics of young and old organizations using a basis of three kinds of change: ultimate goals, task structure and social structure. This suggests a growth pattern.

As well, Flory (1965:258-265) clearly identifies and elucidates upon four distinct developmental stages: (1) birth and struggle for survival, (2) period of rapid growth or adolescence, (3) a vigorous stage of prolonged maturity and (4) senescence, with its decay, decline and eventual death.

In summary, then, the goals/growth framework suggests that a different goal or goal standard would be used for an organization in the adolescence stage as compared to one in the senescence stage. This approach assists in ensuring that the proper goals are being measured and the appropriate standards being utilized in setting up an effectiveness design. As well, the goals/growth framework ensures that the ultimate effectiveness rating is more related to reality than if growth was not considered.

5. Effectiveness-efficiency relationship. Finally, any discussion of organizational effectiveness or performance must take into account efficiency. Etzioni (1964:9) and Price (1972:101,196) indicate that although effectiveness and efficiency often go hand in hand, they not always do; and as such "efficiency is often confused with effectiveness" (Price, 1972:196). Effectiveness has been defined as the degree of goal attainment. Etzioni (1964:8) and Price (1972: 195) both define efficiency as ". . . the amount of resources used to produce a unit of output." McNeil (1976) distinguishes between effectiveness and efficiency as "doing the right thing" and "doing the thing right" respectively. It was the intention of this writer to subsume efficiency as a sub-set of effectiveness, however, Etzioni (1964:8-9) and Price (1962:196) suggest that this cannot be done.

Consider their arguments: while an organization can be highly efficient, it could be highly ineffective. If efficiency was a true sub-set of effectiveness, then high efficiency should indicate high effectiveness. But this is not the case. Price (1972:196) makes the point clear by contending that while, "efficiency and effectiveness are probably positively related; . . . the concepts are different and should be conceptually distinguished." This being the case, then, this paper proposes the following relationship between effectiveness, efficiency and performance.

Organizational performance is determined by measuring the degree of success attained in effectiveness and efficiency; i.e., effectiveness and efficiency are the two key factors in measuring the successful performance of an organization. This conceptualization is similar to the one proposed by Hasenfeld and English (1975:614). It is further proposed that efficiency should be considered for the same six variables as with effectiveness (see Figure 5), i.e., how well were resources utilized to attain input, process, output and environmental goals? A true measure of organizational performance would be a composite sum of effectiveness and efficiency. Further discussion of efficiency, however, is beyond the scope of this paper.

Investment Variables (Input)

This refers to the human and non-human asset investments in terms of outlay costs and replacement costs (Brummet, et al., 1973:533). Investment variables need to be measured in order to meet the resource acquisition and development information needs. Steers (1975:549) resource acquisition criterion as well as part of Yuchtman and Seashore's

Organizational Performance

Variables	Measures of Success		Total
	Effectiveness	Efficiency	
Investment			
Causal			
Intervening			
Output			
Return			
Environment			
Total			
Composite Measure of Performance	-----		

Figure 5

Chart Illustrating the Determination of Organizational Performance by Using Success Measures of Effectiveness and Efficiency

(1973:165) system resource model (i.e., the success of acquiring resources in a competitive environment) are included in this variable.

Causal Variables (Input)

Causal variables are ". . . independent variables that can be directly or purposely altered or changed by the organization and its

management . . . "(Likert and Bowers, 1974:406). They ". . . include the type and condition of plant and equipment, and the type and level of employee competency, managerial behavior, organizational structure, and related factors" (Brummet, et al., 1973:533). Blanchard and Hersey (1972:97) include organizational objectives and technology as causal factors. This illustrates two important features of the proposed model: goals framework for all system components and the inclusion of technology as an organizational factor. It should be noted that while Likert and Bowers (1974:408) categorize subordinate peer behavior as an intervening variable, Brummet, et al., (1973:534) and Robinson (1974:28) treat it as a causal variable. Basically three types of causal factors can be identified: human, non-human and organizational (Figure 4). Causal variables, according to Brummet, et al., (1973:533) can be measured both in dollar and socio-psychological terms. Conventional accounting practices presently provide non-human data in the form of asset book values but techniques need to be developed to value the current state of the human and organizational assets (Brummet, et al., 1973:535).

Intervening Variables (Process)

Intervening variables ". . . reflect the internal state, health, and performance capabilities of the organization" (Likert and Bowers, 1974:406). Since an impact on a causal variable does not produce an immediate direct result upon an end-result variable, intervening variables account for the time lag effect. These are usually measured in "perception" or socio-psychological terms.

Robinson (1974:28) suggests that the intervening variables consist of synergistic conditions of attitudes, motivations, communication, interaction capabilities, problem solving/action capabilities, health, and labor relations. Likert and Bowers (1974:406) distinguish between individual factors and collective capacity.

Immegart and Pilecki (1973:106) suggest that organizational health is an output dimension rather than an intervening or a process type variable, while Mott (1972:20) implies that organizational health (adaptability and flexibility) might be process-type variables. Schein (1970:119) states that an organization maintains its health or effectiveness through an adaptive-coping cycle. Bennis, (Schein, 1970:118), presented three criteria of health which imply process type factors: adaptability, sense of identity and capacity to test reality. These are exactly the same criteria used by Immegart and Pilecki (1973:106). Further, Schein (1970:118-119) suggests that integration and differentiation are crucial indicators of effectiveness (see Figure 4) as do Lorsch (1970:9) and Immegart and Pilecki (1973:106). Beckhard (1969:11-12) adds that Gardner viewed effectiveness in terms of "self-renewing" while Miles defined a healthy organization in relation to task accomplishment, integration and adaptation.

Hence, the proposed model identifies four major intervening (process) variable factors: subordinate behavior, individual psychology, collective capacities and organizational health (refer to Figure 4 for more detail).

End-Result Variables (Output)

This refers to the "dependent variables that reflect the results achieved by that organization" (Likert and Bowers, 1974:406). According to Brummet, et al., (1973:535), "These include the level of productivity (function of goals), product quality, sales, earnings, net cash flows, employee health and satisfaction and related factors." In essence, there are two major end-result variable factors: productivity and employee health and satisfaction (refer to Figure 4).

Satisfaction was once considered to be a causal factor. Schwab and Cummings (1974:130) demonstrated that there is no necessary causal relationship between satisfaction and productivity. They (1974:133), as well as Dunn and Stephens (1971:19), stress that March and Simon's model of treating both as end-results or dependent variables has clarified the problem. The normally acceptable end-result goal of any organization is productivity. If satisfaction is an end in itself, and has no necessary causal effect upon productivity, then one may ask the question: Why be concerned with satisfaction? Kast (1974:164) and Smith (1974:273) reply by stating that not only is satisfaction a legitimate end-result goal of an organization, but that satisfaction leads to overt behavior like absenteeism and turn-over, which are of concern because they affect productivity. Hence, productivity and satisfaction are treated as end-result factors.

Return on Investment Variables (Output)

This includes the profitability position of the organization.

External Environment

The external environment is not only very important to what goes on within an organization, the form the organization takes and the consequences of its actions, but is becoming increasingly important (Hall, 1972:297). Friedlander and Pickle (1971:187) aver that research on effectiveness assumes a closed system organization and as such is confined, ". . . to criteria of effectiveness that are limited to the internal dynamics of the organization." They (Friedlander and Pickle, 1971:188) add that since organizations are open-energy systems, a variety of energy transfers not only within the organization, ". . . but also between the organization and its external environment." As well, Lorsch (1970:9) speaks of a dynamic interaction between an effective organization and its external environment: ". . . the effective organization more satisfactorily met the demands of its environment for both differentiation and integration. . . ." HRA theorists like Liddon and Morrison (1972:7) and Brummet (1969:20) are also concerned with measuring the groups in the external environment as does Longnecker (1969:549). Hence any model for measuring effectiveness must include the external environment as a variable. What, though, are some of the major factors of the external environment?

Hall (1972:298-306) identifies and discusses eight such conditions: (1) technological, (2) legal, (3) political, (4) economic, (5) demographic, (6) ecological, (7) cultural and (8) social. Friedlander and Pickle (1971:187) state that the organization must meet the demands of the external environment, which they classified into five societal components: ". . . the relevant members of the

society with which it transacts, its community, its government, its customers, its suppliers and its creditors." Liddon and Morrison (1972:7) add "The external assets involve evaluating the impact of good relations with creditors, suppliers, shareholders, distributors, customers . . . "as well as the ". . . labor market. . . ." In terms of the above identified types of factors to consider in the external environment, this paper proposes to use the following major factors: (1) adaptation, (2) integration-differentiation, and (3) societal conditions (technological, legal, political, economic, demographic, ecological and cultural) as they relate to customers, community, suppliers, creditors and government and other organizations.

Model Summary

The developed HRA-based model is summarized in Figure 4. It can be seen that the six major effectiveness variables (investment, causal, intervening, end-result, return and external environment) are placed into a functional goals/growth framework. The goals/growth framework is important to the model for two reasons. First, the framework illustrates that prior to assessing organizational effectiveness, functional goals must be established for the appropriate variables. Second, the framework demonstrates that realistic goals are determined in relation to the maturity or age (growth) of the institution. The utility of the model is that it provides an inventory of effectiveness variables and sub-factors so that only the appropriate factors would be chosen when the effectiveness audit is being designed.

CONTRIBUTIONS AND IMPLICATIONS TO MEASURING EDUCATIONAL EFFECTIVENESS

General

The problem of effectiveness in all types of organizations, writes Perrow (1972:417), ". . . is easily one of the most critical issues." The problem of measuring effectiveness is compounded greatly in social service organizations like schools and hospitals, claim Hasenfeld and English (1975:21), because of the ". . . difficulty in developing reliable and valid measures of effectiveness." They (Hasenfeld and English, 1975:614-616) further state that the problem is further compounded in human service organizations because of a host of "unique problems." Sheehan (1973:131) adds, "There are, however, some factors which make productivity or efficiency measurements for the educational system especially difficult." It is hoped that the model developed in this paper will assist in reducing the difficulty of measuring effectiveness in schools--over a long term period, at least. The writer believes that the proposed model has many positive implications for school effectiveness; some of which follow.

Program Structure and MIS

The first important contribution of the model (Figure 4) is that it provides the underpinnings for a program structure that would form a Management Information System (MIS). It is difficult to conduct effectiveness audits on an on-going or periodic basis without some form of MIS that would furnish the necessary data. Hence, it is recommended that schools adopt the school effectiveness program structure as an integral part of their MIS (example given below in Figure 6):

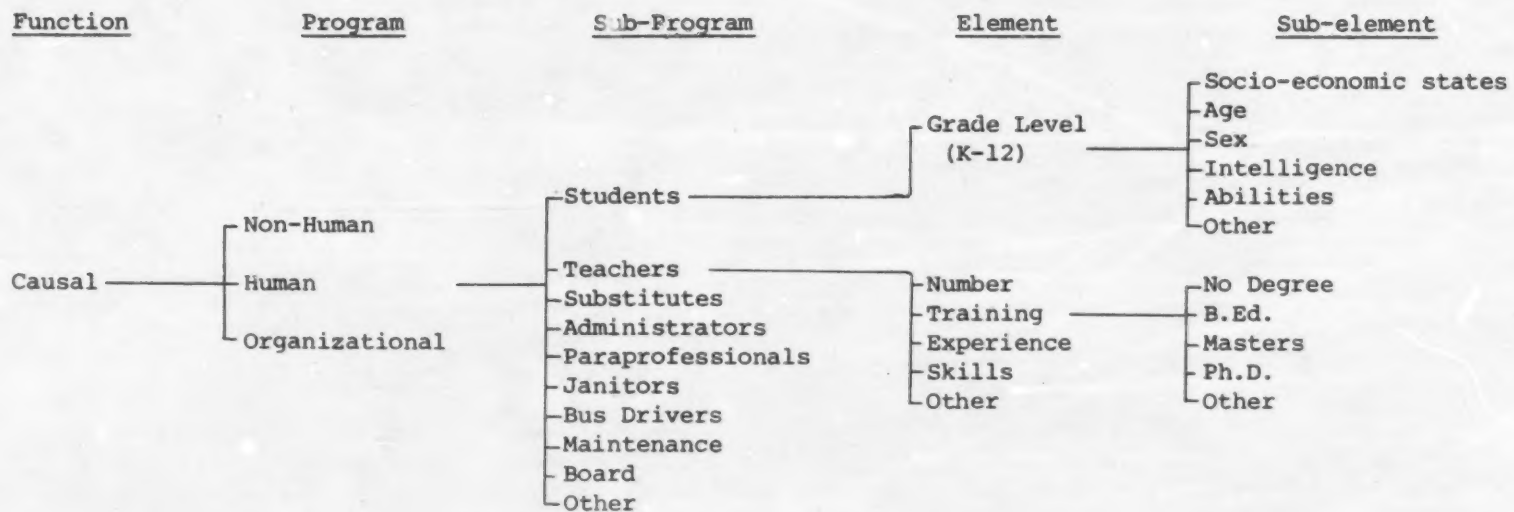


Figure 6
Sample of School Effectiveness Program Structure

The above example illustrates how the program structure could be expanded in such a way as to include a comprehensive inventory of an effectiveness audit. Appendix A illustrates further expansion of the structure. Hence, the first important contribution of the proposed model is that a program structure could be developed for an MIS system. Portions of the MIS could be on-going, others could be periodic. Such an approach would enhance, especially on a long-term basis, the measurement of school effectiveness.

School Effectiveness Inventory

The second contribution is that an expanded effectiveness program structure would provide an inventory from which items would be chosen in the design of a school effectiveness assessment. Due to cost, time and impracticability, it is impossible to consider all items in the determination of effectiveness. Hence a judicious selection would need to be made--the same is true in the development of the MIS referred to earlier. The inventory would be built from the effectiveness program structure and would use a numeric coding and classification system as illustrated below (adaptation of Figure 6) in Figure 7:

- 2.0 Causal
 - 2.1 Non-Human
 - 2.2 Human
 - 2.2.1 Students
 - 2.2.2 Teachers
 - 2.2.2.1 number of
 - 2.2.2.2 training
 - 2.2.2.2.1 No Degree
 - 2.2.2.2.2 B.Ed.
- 2.3 Organizational

Figure 7

Sample of School Effectiveness Inventory

Analytical Framework for
Judgment of School
Effectiveness

The third significant contribution of the HRA-based model presented in Figure 4 is the analytical functional goals/growth framework for making a final judgment. The framework suggests that all six major variables require goals, standards and judgment criteria in relation to the growth or maturation stage of the organization. Hence, two simultaneous "fund accounts" are required in the MIS, or if not an MIS, then in the effectiveness audit: "expected goals fund" and "actual attainment fund." Each "fund account" would provide the raw data as per above program structure. For example (refer to Appendix A), if the expected specific goal (objective) in any given school was to have all grade 4 students increase their reading comprehension by at least one grade (1.0) level, then the appropriate "expected goals account" would read 1.0; if, after assessment, the actual attainment was .85 of a grade level, then the appropriate "actual attainment account" would indicate a .85.

The Stake Evaluation Model (MacKay and Maguire, 1971:20) would provide an analytical framework for comparing the two accounts, from which an "effectiveness balance sheet" would show the relationship between assets and liabilities. In relation to the above example, the "effectiveness balance sheet" entry could look like this:

Account Code	Account Name	Expected Fund	Actual Fund	Comparison (Balance)	
				Credit (+)	Debit (-)
4.1.2.2.4	Student Reading Level	1.0	.85		.15

Figure 8

Sample of School Effectiveness Balance Sheet

Thus, one could get an effectiveness rating on only one item as shown above, or an effectiveness rating of any one or a series of sub-elements, elements, sub-programs, programs, or functions. A comparison of all items chosen for the audit would indicate a composite organizational "balance sheet" entry of being either effective (credit entry) or ineffective (debit entry) and to what degree.

A crucial requirement, however, for assessment is the availability of data gathering and measurement instruments. Appendix B (Duke, et al., 1972:202) provides a taxonomy of acceptable means or methods of gathering assessment data while Appendix C lists some instruments presently used for gathering and analyzing the variables contained within the model. What is required, though, is a complete inventory of techniques and instruments like the one developed by Price (1972).

Need for Goal Setting

The proposed model also indicates the need for education to accept and implement the goals approach to planning. By continuing

the stand that "since educational results are so difficult to measure, we may as well not," we will never attain a state of measuring effectiveness. However, by accepting and applying the goals/growth approach to all six variables, we will have a better chance of assessing effectiveness.

Accreditation

In 1972 the Alberta Department of Education abolished provincial (departmental) exams for grade 9 and 12 students. Since then, debate has raged as to whether or not the quality of education has been reduced due to that policy decision. The latest public outcry of "academic inflation" was initiated by Professor J. Balderson's release of a study which suggested that ". . . grades of A and B went up 14 percent, while grades of C, D and F dropped by an identical 14 percent" (Edmonton Journal, March 25, 1976:1). In response to these types of public pressures, the Department of Education developed and circulated an accreditation proposal for reaction (Stringham, et al., 1975). The report suggests that an accreditation mechanism would assist in ensuring the utmost quality of education. Unfortunately, though, the proposal does not provide a framework for assessing effectiveness of schools. The HRA-based model proposed in this paper could provide an accreditation framework in terms of the three contributions indicated earlier.

Managerial View of Worth of Human Resources as a Valuable Asset

It is argued by many theorists that people are the most important asset to an organization (Katz, 1971:413, Dermer and Siegel,

1974:88; Pyle, 1973:31-33; Likert, 1967:146-7; and Glautier and Underdown, 1974:163, amongst many others). Adoption and utilization of the HRA-based model should result in the educational administrator realizing the real worth and dignity of the people in the organization and their potential to improving organizational effectiveness (Miles, 1974, Megginson, 1968:5; Flamholtz, 1969:32; and Hermanson, et al., 1973:179; and Pyle, 1973:47). The same theorists further argue that this enlightened view towards the worth of people results in a more favorable organizational climate (refer to intervening variables in Figure 4) and hence an increase in ". . . the level of effectiveness of organizational functioning" (Katz, 1971:412).

Managerial Decision-Making

The seventh implication to school effectiveness deals with the improvement of administrative decision-making. The purpose of providing organizational information to management is for decision-making. According to Hermanson, et al., (1973:179), Likert (1973:22), Flamholtz (1969:33) and Pyle (1973:38), adoption of an HRA model could have a significant impact upon decision-making. Hence, it is suggested that decision-making could be improved by any school organization that adopts the proposed HRA-based MIS.

Organizational Renewal

Schools are functioning in an external and internal environment that is rapidly transforming. In order to maintain present effectiveness in the light of societal change, some form of planned change strategies are required. The proposed HRA-based model could provide

necessary data for an organizational development (OD), Management by Objectives (MBO), Performance Appraisal System (PAS) or any other type of renewal program.

SUMMARY AND CONCLUSIONS

The major purpose of this paper was to develop an HRA-based macro-model that could be used for designing a school organizational effectiveness audit. Initially, the paper reviewed the advent and definition of HRA. In order to develop the proposed model, the different approaches to measuring effectiveness were reviewed, effectiveness was defined, a functional goal setting rationale was developed, a goals/growth framework was established, and the effectiveness-efficiency relationship was identified. The six identified effectiveness variables were briefly discussed and the model summarized. Finally, eight implications to educational effectiveness were identified and explained. As well, an inventory of some measurement instruments was developed (Appendix C).

In conclusion, it can be stated that this paper established a macro-model for designing an organizational effectiveness audit. Any person conducting a school effectiveness audit should be able to select the factors deemed appropriate and important to the particular school from the effectiveness program structure and inventory. Ideally, the suggested MIS should be implemented so that effectiveness data would be available on an on-going or periodic basis. Instruments for gathering and analyzing the data have also been provided. What is required now, though, is a practicable application of the model.

*Appendices omitted due to length

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